

WATER USE AND POWER GENERATION IN GEORGIA

Julia L. Fanning

AUTHORS: Hydrologist, Georgia Water-Use Program, U.S. Geological Survey, Water Resources Division, 6481 Peachtree Industrial Blvd., Suite B, Doraville, GA 30360.

REFERENCE: *Proceedings of the 1989 Georgia Water Resources Conference*, held May 16 and 17, 1989, at The University of Georgia. Kathryn J. Hatcher, Editor, Institute of Natural Resources, The University of Georgia, Athens, Georgia, 1989.

The Georgia Water-Use Program has been effective in collecting, compiling and disseminating water-use data for the principal water users in the State. This poster session will present information from the Georgia Water Use Data System (GWUDS) to illustrate how water is used in Georgia by Physiographic Province, with emphasis on power generation.

The Physiographic Provinces play an important role in the distribution of water use throughout Georgia. With an annual average of 50 inches of precipitation statewide, there is an abundant supply of water to replenish the lakes and streams and ground-water table. In the Valley and Ridge province, which includes the Appalachian Ridge, water is obtained from both ground-water and surface-water sources. Most of the water in the Piedmont and Blue Ridge provinces, is primarily supplied by surface water. In the Coastal Plain, the ground-water aquifers are the principal sources of water.

In 1985, an estimated 5.4 billion gallons of freshwater was withdrawn each day in Georgia. Although water withdrawals vary with user, the largest amounts were for power generation. Withdrawals of surface water totaled 4.4 billions gallons per day of which 75 percent was used for cooling purposes at thermoelectric plants. An additional 40 billion gallons per day was used in-stream to generate hydroelectric power.

There has been a steady increase in hydroelectric and thermoelectric power generation since 1950. However, in recent years hydroelectric power generation has been curtailed because of drought conditions and below-normal reservoir levels. Withdrawals for thermoelectric power in Georgia declined by about 25% from 1980 to 1985 or nearly 1.1 billion gallons per day.

LITERATURE CITED

- Callahan, J.T., Newcomb, L.E., and Geurin, J.W., 1965, Water in Georgia, Geological Survey Water-Supply Paper 1762.
- Carter, R.F. and Fanning, J.L., 1982, Monthly low-flow characteristics of Georgia streams: U.S. Geological Survey Open-File Report 82-560, 81 p.
- Carter, R.F., 1985, Effects of the drought of 1980-81 on streamflow and on ground-water levels in Georgia: U.S. Geological Survey Water Resources Investigations, 83-4158, 46 p.
- Carter, R.F. and Hopkins, E.H., 1985, Georgia water facts--surface water resources in the United States, in National Water Summary, 1985: U.S. Geological Survey Water-Supply Paper 2300.
- Clarke, J.S., and Pierce, R.R., 1984, Georgia water facts--ground water resources in the United States, in National Water Summary, 1984: U.S. Geological Survey Water-Supply Paper 2275.
- Turlington, M.C., Fanning, J.L. and Doonan, G.A., 1987, Water use in Georgia by county for 1985: Georgia Geological Survey, information Circular 81, 110 p.
- University of Georgia, 1986, Land and water in Georgia:2000, Subcommittee report on land and water resources, p.43.
- U.S. Bureau of the Census, 1982, 1980 Census of population: Number of Inhabitants, Georgia: 53 p.
- U.S. Department of Energy, 1987, Monthly powerplant report, Georgia, Energy Information Administration 759.

